

# Steller Sea Lion Protection Measures Draft Supplemental Environmental Impact Statement



**United States Department of Commerce**

National Oceanic and Atmospheric Administration

National Marine Fisheries Service  
Alaska Region

August 2001



# Overview - Volume 1

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## Volume II    Contents

Appendix A	Draft Section 7 Biological Opinion
Appendix B	Scoping Process
Appendix C	Regulatory Impact Review
Appendix D	Market Analysis
Appendix E	Harvest Data and Maps
Appendix F	Social Impact Assessment

# Overview - Volume 2

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- ◆ Appendix A Draft Section 7 Biological Opinion
- ◆ Appendix B Scoping Process
- ◆ Appendix C Regulatory Impact Review
- ◆ Appendix D Market Analysis
- ◆ Appendix E Harvest Data and Maps
- ◆ Appendix F Social Impact Assessment

# Purpose of SSL Protection Measures

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- 1 modify BSAI and GOA pollock, Pacific cod and Atka mackerel fisheries such that the reconfigured fisheries do not jeopardize the continued existence of SSL or adversely modify their critical habitat.
- 2 Modify the fisheries such that the reconfiguration minimizes the economic and social costs that will be imposed on the commercial fishing industry and associated coastal communities.

# Effects of the Action (Alternatives)

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- ◆ Direct and indirect effects addressed for:

- marine mammals

- target fish species

- non-specified species

- forage species

- prohibited species

- ESA listed Pacific salmon

- seabirds

- marine habitat

- ecosystem

- State of Alaska managed fisheries

- management and enforcement

- social and economic issues

- ◆ Cumulative effects for same 12 topics

# Reference Points - Resource Issues

Reference Point	Application
Current population trajectory or harvest rate of subject species	(1) Marine mammals (2) Target commercial fish species (3) Incidental catch of non-specified species (4) Forage species (5) Prohibited species bycatch (6) ESA list Pacific salmon (7) Seabirds
Current size and quality of marine benthic habitat and other essential fish habitat	Marine benthic habitat and other essential fish habitat
Application of principles of ecosystem management	Ecosystem
Current management and enforcement activities	(1) State of Alaska managed fisheries (2) Management complexity and enforcement
Current rates of fishing accidents	Human safety and private property (vessels)



# Typical Analytical Approach for Each Topic

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- 1 Key effects question(s) identified
- 2 Criteria developed for determining the significance of the effects in relation to a “reference point”
- 3 Information assembled and predictions developed for the effects question(s)
- 4 Significance criteria applied
- 5 Summary table assembled on the significance of the effects of each alternative



# NEPA - Significance Determinations

- S+**     **Significant beneficial effect** in relation to the reference point; this determination is based on ample information and data.
- CS+**   **Conditionally significant beneficial effect** in relation to the reference point; determination is lacking in quantitative data and information, however, judgement is the action will cause an improvement in the reference point condition.
- I**     **Insignificant effect** in relation to the reference point; determination is based upon information and data, along with the judgement that the effects are small and within the “normal variability” surrounding the reference point condition.
- CS-**   **Conditionally significant adverse effect** in relation to the reference point; based on insufficient data and information, however, judgement is the action will cause decline in the reference point condition.
- S-**     **Significant adverse effect** in relation to the reference point and based on ample information and data.
- U**     **Unknown effect** in relation to the reference point

# Significance Determinations

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- ◆ S+ Significant Beneficial
- ◆ CS+ Conditionally Significant Beneficial
- ◆ I Insignificant
- ◆ CS- Conditionally Significant Adverse
- ◆ S- Significant Adverse
- ◆ U Unknown

David Witherell

Alternatives Analyzed

# Alternatives Examined - Chapter 2

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- ◆ Alternative 1: No action.
- ◆ Alternative 2: Low and Slow Approach.
- ◆ Alternative 3: Restricted and Closed Area Approach.
- ◆ Alternative 4: Area and Fishery Specific Approach.
  - Option 1: Chignik area <60' fixed gear exemption.
  - Option 2: Unalaska area <60' fixed gear exemption.
  - Option 3: Gear specific zones for GOA Pacific cod fisheries.
- ◆ Alternative 5: Critical Habitat Catch Limit Approach.

## **Alternative 1 - No Action section 2.3.1 (p. 2-8); map 2.3.1**

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- ◆ All emergency rules to protect sea lions would expire.
- ◆ Measures still in place would include:
  - 3 nm no transit zones around rookeries.
  - 10-20 nm trawl closures around rookeries.
  - Atka mackerel fishery: 2 seasons, CH catch limits, and VMS requirements.
- ◆ This alternative is presumed to violate ESA.

## **Alternative 2 - Low and Slow Approach section 2.3.2 (p. 2-12); map 2.3.2**

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- ◆ Originally proposed by Leape and Cline (based on PSEIS), major measures would include:
  - Reduced TACs, set as a % of ABC.
  - Four seasons, with equal TAC apportionment.
  - No trawling (for any species) in SSL critical habitat.
  - Foraging area cod catch limits.
  - Seasonal exclusive area registration.
  - Maximum daily catch limits.
  - VMS coverage on fixed gear cod.
  - Zonal approach for cod fisheries around rookeries and haulouts.
  - No pollock fishing in the Aleutian Islands.

## **Alternative 3 - Restricted and Closed Area Approach section 2.3.3 (p. 2-20); map 2.3.3**

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- ◆ Originally the BiOp3 RPA, major measures include:
  - 3 nm no transit zones around rookeries
  - 3 nm no groundfish fishing zones around haulouts.
  - No cod, pollock, or mackerel fishing 11/1-1/20 inside CH.
  - Large closure areas for cod, pollock, and mackerel fishing.
  - Two seasons outside of CH. Four seasons inside CH, with catch limits established inside CH based on the biomass available within the areas designated as open to fishing.
  - BSAI Pacific Cod TAC split into BS and AI components.
  - Global Control Rule. Stops fishing when biomass <20% of unfished biomass, and reduces fishing when biomass <40%.



## **Alternative 4 - Area and Fishery Specific Approach section 2.3.4 (p. 2-26); maps 2.3.4-2.3.6**

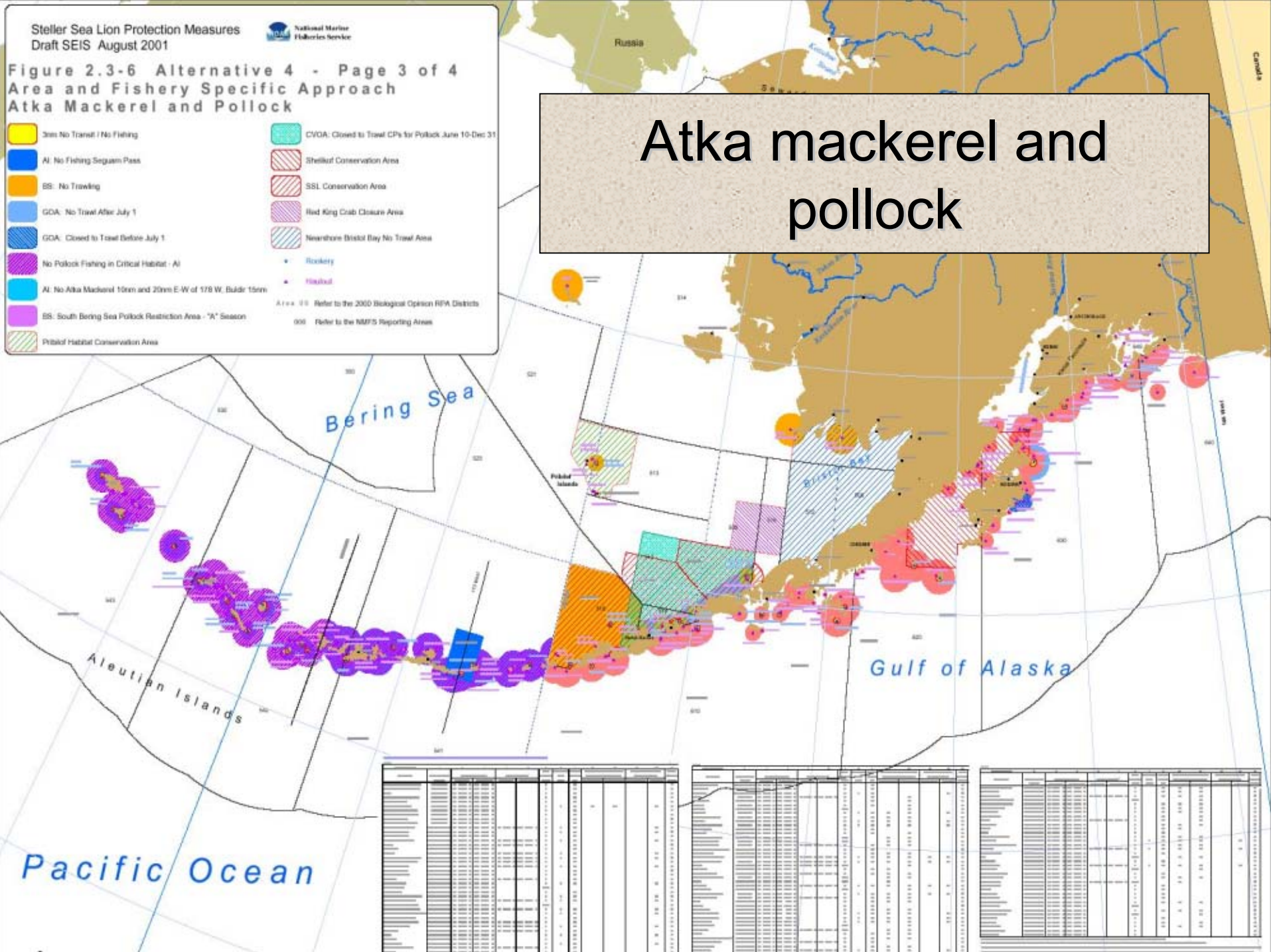
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- ◆ Originally proposed by RPA Committee, major measures include:
  - 3 nm no transit zones around rookeries.
  - 20 nm no groundfish zones around northern BS haulouts.
  - All pollock, cod, and mackerel fishing prohibited in Seguam foraging area, Area 9 (Bogoslof), and Area 4 (Chignik).
  - Fishery specific seasons, TAC apportionments, and area closures within each of the regions (BS, AI, GOA).
  - Modified Global Control Rule. Stops fishing when biomass <20% of unfished biomass, and reduces fishing when biomass <40%.
- ◆ Identified by NMFS as the preferred alternative.

Figure 2.3-6 Alternative 4 - Page 3 of 4  
Area and Fishery Specific Approach  
Atka Mackerel and Pollock



# Atka mackerel and pollock



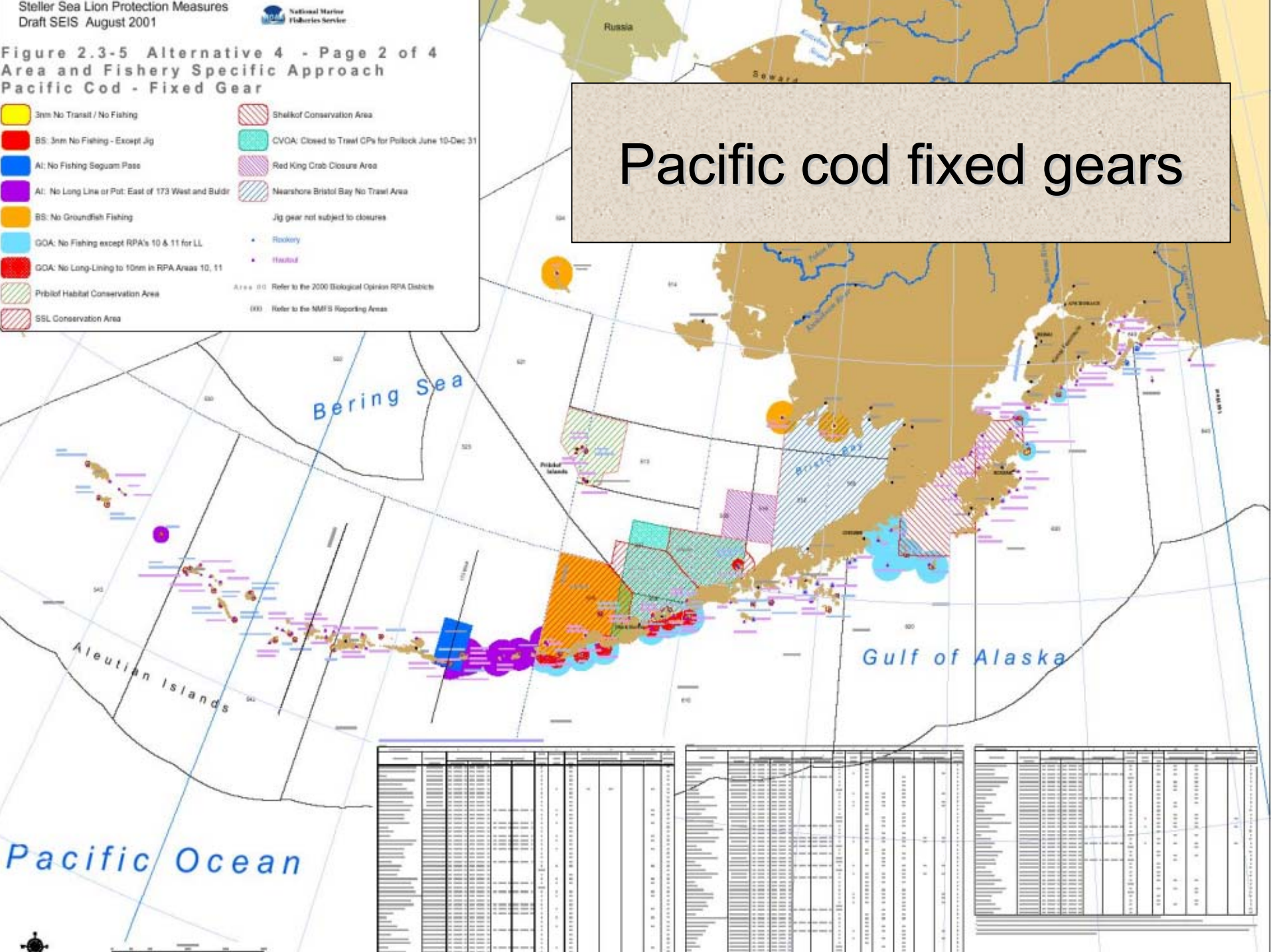
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Figure 2.3-5 Alternative 4 - Page 2 of 4  
Area and Fishery Specific Approach  
Pacific Cod - Fixed Gear



# Pacific cod fixed gears

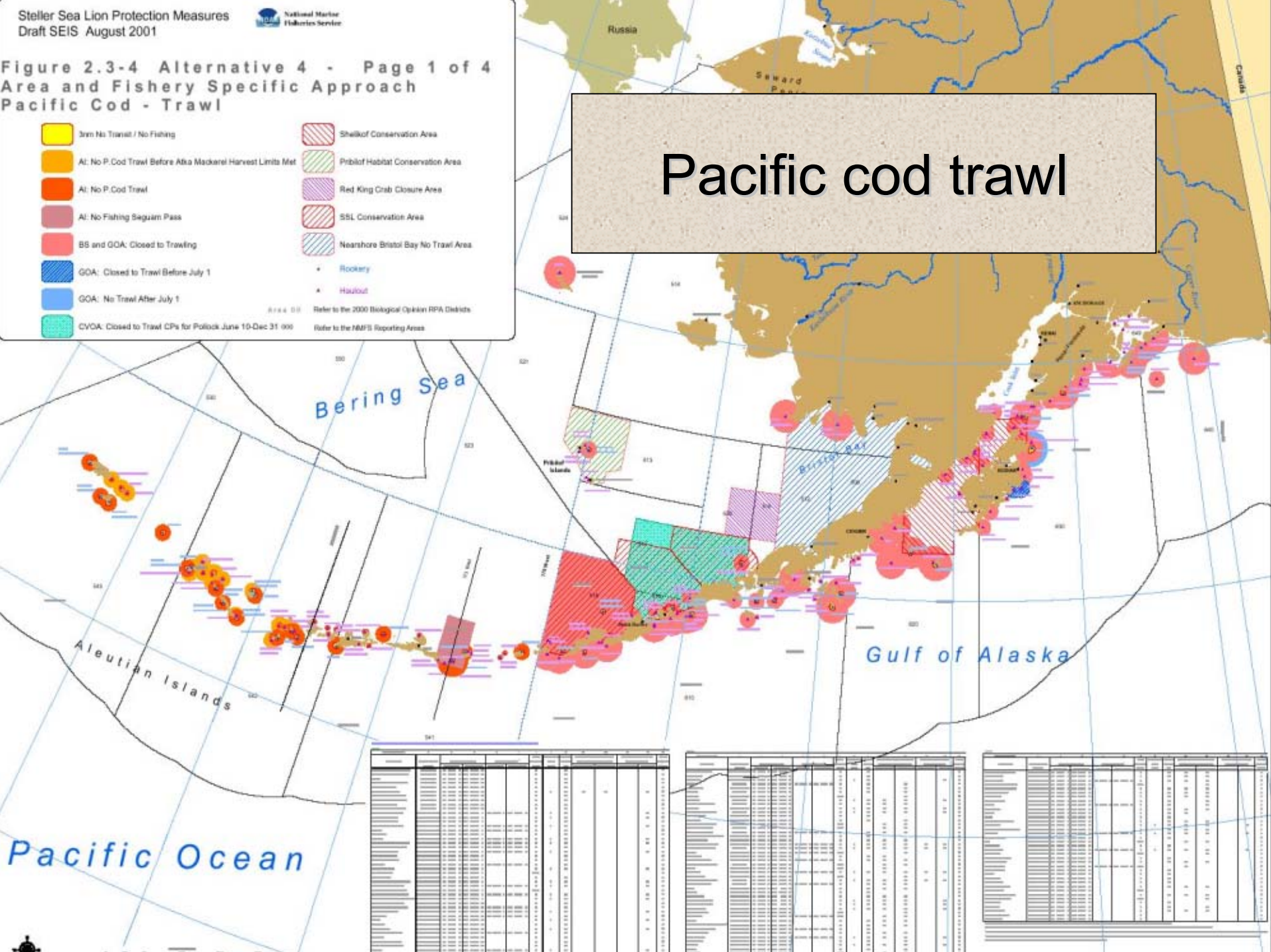


Area	Area 00	Area 01	Area 02	Area 03	Area 04	Area 05	Area 06	Area 07	Area 08	Area 09	Area 10	Area 11	Area 12	Area 13	Area 14	Area 15	Area 16	Area 17	Area 18	Area 19	Area 20	Area 21	Area 22	Area 23	Area 24	Area 25	Area 26	Area 27	Area 28	Area 29	Area 30	Area 31	Area 32	Area 33	Area 34	Area 35	Area 36	Area 37	Area 38	Area 39	Area 40	Area 41	Area 42	Area 43	Area 44	Area 45	Area 46	Area 47	Area 48	Area 49	Area 50	Area 51	Area 52	Area 53	Area 54	Area 55	Area 56	Area 57	Area 58	Area 59	Area 60	Area 61	Area 62	Area 63	Area 64	Area 65	Area 66	Area 67	Area 68	Area 69	Area 70	Area 71	Area 72	Area 73	Area 74	Area 75	Area 76	Area 77	Area 78	Area 79	Area 80	Area 81	Area 82	Area 83	Area 84	Area 85	Area 86	Area 87	Area 88	Area 89	Area 90	Area 91	Area 92	Area 93	Area 94	Area 95	Area 96	Area 97	Area 98	Area 99	Area 100	Area 101	Area 102	Area 103	Area 104	Area 105	Area 106	Area 107	Area 108	Area 109	Area 110	Area 111	Area 112	Area 113	Area 114	Area 115	Area 116	Area 117	Area 118	Area 119	Area 120	Area 121	Area 122	Area 123	Area 124	Area 125	Area 126	Area 127	Area 128	Area 129	Area 130	Area 131	Area 132	Area 133	Area 134	Area 135	Area 136	Area 137	Area 138	Area 139	Area 140	Area 141	Area 142	Area 143	Area 144	Area 145	Area 146	Area 147	Area 148	Area 149	Area 150	Area 151	Area 152	Area 153	Area 154	Area 155	Area 156	Area 157	Area 158	Area 159	Area 160	Area 161	Area 162	Area 163	Area 164	Area 165	Area 166	Area 167	Area 168	Area 169	Area 170	Area 171	Area 172	Area 173	Area 174	Area 175	Area 176	Area 177	Area 178	Area 179	Area 180	Area 181	Area 182	Area 183	Area 184	Area 185	Area 186	Area 187	Area 188	Area 189	Area 190	Area 191	Area 192	Area 193	Area 194	Area 195	Area 196	Area 197	Area 198	Area 199	Area 200	Area 201	Area 202	Area 203	Area 204	Area 205	Area 206	Area 207	Area 208	Area 209	Area 210	Area 211	Area 212	Area 213	Area 214	Area 215	Area 216	Area 217	Area 218	Area 219	Area 220	Area 221	Area 222	Area 223	Area 224	Area 225	Area 226	Area 227	Area 228	Area 229	Area 230	Area 231	Area 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676	Area 677	Area 678	Area 679	Area 680	Area 681	Area 682	Area 683	Area 684	Area 685	Area 686	Area 687	Area 688	Area 689	Area 690	Area 691	Area 692	Area 693	Area 694	Area 695	Area 696	Area 697	Area 698	Area 699	Area 700	Area 701	Area 702	Area 703	Area 704	Area 705	Area 706	Area 707	Area 708	Area 709	Area 710	Area 711	Area 712	Area 713	Area 714	Area 715	Area 716	Area 717	Area 718	Area 719	Area 720	Area 721	Area 722	Area 723	Area 724	Area 725	Area 726	Area 727	Area 728	Area 729	Area 730	Area 731	Area 732	Area 733	Area 734	Area 735	Area 736	Area 737	Area 738	Area 739	Area 740	Area 741	Area 742	Area 743	Area 744	Area 745	Area 746	Area 747	Area 748	Area 749	Area 750	Area 751	Area 752	Area 753	Area 754	Area 755	Area 756	Area 757	Area 758	Area 759	Area 760	Area 761	Area 762	Area 763	Area 764	Area 765	Area 766	Area 767	Area 768	Area 769	Area 770	Area 771	Area 772	Area 773	Area 774	Area 775	Area 776	Area 777	Area 778	Area 779	Area 780	Area 781	Area 782	Area 783	Area 784	Area 785	Area 786	Area 787	Area 788	Area 789	Area 790	Area 791	Area 792	Area 793	Area 794	Area 795	Area 796	Area 797	Area 798	Area 799	Area 800	Area 801	Area 802	Area 803	Area 804	Area 805	Area 806	Area 807	Area 808	Area 809	Area 810	Area 811	Area 812	Area 813	Area 814	Area 815	Area 816	Area 817	Area 818	Area 819	Area 820	Area 821	Area 822	Area 823	Area 824	Area 825	Area 826	Area 827	Area 828	Area 829	Area 830	Area 831	Area 832	Area 833	Area 834	Area 835	Area 836	Area 837	Area 838	Area 839	Area 840	Area 841	Area 842	Area 843	Area 844	Area 845	Area 846	Area 847	Area 848	Area 849	Area 850	Area 851	Area 852	Area 853	Area 854	Area 855	Area 856	Area 857	Area 858	Area 859	Area 860	Area 861	Area 862	Area 863	Area 864	Area 865	Area 866	Area 867	Area 868	Area 869	Area 870	Area 871	Area 872	Area 873	Area 874	Area 875	Area 876	Area 877	Area 878	Area 879	Area 880	Area 881	Area 882	Area 883	Area 884	Area 885	Area 886	Area 887	Area 888	Area 889	Area 890	Area 891	Area 892	Area 893	Area 894	Area 895	Area 896	Area 897	Area 898	Area 899	Area 900	Area 901	Area 902	Area 903	Area 904	Area 905	Area 906	Area 907	Area 908	Area 909	Area 910	Area 911	Area 912	Area 913	Area 914	Area 915	Area 916	Area 917	Area 918	Area 919	Area 920	Area 921	Area 922	Area 923	Area 924	Area 925	Area 926	Area 927	Area 928	Area 929	Area 930	Area 931	Area 932	Area 933	Area 934	Area 935	Area 936	Area 937	Area 938	Area 939	Area 940	Area 941	Area 942	Area 943	Area 944	Area 945	Area 946	Area 947	Area 948	Area 949	Area 950	Area 951	Area 952	Area 953	Area 954	Area 955	Area 956	Area 957	Area 958	Area 959	Area 960	Area 961	Area 962	Area 963	Area 964	Area 965	Area 966	Area 967	Area 968	Area 969	Area 970	Area 971	Area 972	Area 973	Area 974	Area 975	Area 976	Area 977	Area 978	Area 979	Area 980	Area 981	Area 982	Area 983	Area 984	Area 985	Area 986	Area 987	Area 988	Area 989	Area 990	Area 991	Area 992	Area 993	Area 994	Area 995	Area 996	Area 997	Area 998	Area 999	Area 1000	Area 1001	Area 1002	Area 1003	Area 1004	Area 1005	Area 1006	Area 1007	Area 1008	Area 1009	Area 1010	Area 1011	Area 1012	Area 1013	Area 1014	Area 1015	Area 1016	Area 1017	Area 1018	Area 1019	Area 1020	Area 1021	Area 1022	Area 1023	Area 1024	Area 1025	Area 1026	Area 1027	Area 1028	Area 1029	Area 1030	Area 1031	Area 1032	Area 1033	Area 1034	Area 1035	Area 1036	Area 1037	Area 1038	Area 1039	Area 1040	Area 1041	Area 1042	Area 1043	Area 1044	Area 1045	Area 1046	Area 1047	Area 1048	Area 1049	Area 1050	Area 1051	Area 1052	Area 1053	Area 1054	Area 1055	Area 1056	Area 1057	Area 1058	Area 1059	Area 1060	Area 1061	Area 1062	Area 1063	Area 1064	Area 1065	Area 1066	Area 1067	Area 1068	Area 1069	Area 1070	Area 1071	Area 1072	Area 1073	Area 1074	Area 1075	Area 1076	Area 1077	Area 1078	Area 1079	Area 1080	Area 1081	Area 1082	Area 1083	Area 1084	Area 1085	Area 1086	Area 1087	Area 1088	Area 1089	Area 1090	Area 1091	Area 1092	Area 1093	Area 1094	Area 1095	Area 1096	Area 1097	Area 1098	Area 1099	Area 1100	Area 1101	Area 1102	Area 1103	Area 1104	Area 1105	Area 1106	Area 1107	Area 1108	Area 1109	Area 1110	Area 1111	Area 1112	Area 1113	Area 1114	Area 1115	Area 1116	Area 1117	Area 1118	Area 1119	Area 1120	Area 1121	Area 1122	Area 1123	Area 1124	Area 1125	Area 1126	Area 1127	Area 1128	Area 1129	Area 1130	Area 1131	Area 1132	Area 1133	Area 1134	Area 1135	Area 1136	Area 1137	Area 1138	Area 1139	Area 1140	Area 1141	Area 1142	Area 1143	Area 1144	Area 1145	
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Figure 2.3-4 Alternative 4 - Page 1 of 4  
Area and Fishery Specific Approach  
Pacific Cod - Trawl



Pacific cod trawl



Area	Measure	Start Date	End Date	Notes
AI: No P.Cod Trawl	AI: No P.Cod Trawl	1999-01-01	2000-12-31	AI: No P.Cod Trawl
AI: No Fishing Season Pass	AI: No Fishing Season Pass	1999-01-01	2000-12-31	AI: No Fishing Season Pass
BS and GOA: Closed to Trawling	BS and GOA: Closed to Trawling	1999-01-01	2000-12-31	BS and GOA: Closed to Trawling
GOA: Closed to Trawl Before July 1	GOA: Closed to Trawl Before July 1	1999-01-01	2000-12-31	GOA: Closed to Trawl Before July 1
GOA: No Trawl After July 1	GOA: No Trawl After July 1	1999-01-01	2000-12-31	GOA: No Trawl After July 1
CVOA: Closed to Trawl CPs for Pollock June 10-Dec 31 999	CVOA: Closed to Trawl CPs for Pollock June 10-Dec 31 999	1999-01-01	2000-12-31	CVOA: Closed to Trawl CPs for Pollock June 10-Dec 31 999

Area	Measure	Start Date	End Date	Notes
Shellfish Conservation Area	Shellfish Conservation Area	1999-01-01	2000-12-31	Shellfish Conservation Area
Pribilof Habitat Conservation Area	Pribilof Habitat Conservation Area	1999-01-01	2000-12-31	Pribilof Habitat Conservation Area
Red King Crab Closure Area	Red King Crab Closure Area	1999-01-01	2000-12-31	Red King Crab Closure Area
SBL Conservation Area	SBL Conservation Area	1999-01-01	2000-12-31	SBL Conservation Area
Nearshore Bristol Bay No Trawl Area	Nearshore Bristol Bay No Trawl Area	1999-01-01	2000-12-31	Nearshore Bristol Bay No Trawl Area

Area	Measure	Start Date	End Date	Notes
Rookery	Rookery	1999-01-01	2000-12-31	Rookery
Haulout	Haulout	1999-01-01	2000-12-31	Haulout
Refer to the 2000 Biological Opinion RPA Districts	Refer to the 2000 Biological Opinion RPA Districts	1999-01-01	2000-12-31	Refer to the 2000 Biological Opinion RPA Districts
Refer to the NMFS Reporting Areas	Refer to the NMFS Reporting Areas	1999-01-01	2000-12-31	Refer to the NMFS Reporting Areas



## **Options for Alternative 4 sections 2.3.4, 4.14 (p. 2-30, 4-550); map 2.3.7**

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- ◆ Option 1. Establish a limited fishing zone in the Chignik area (area 4) for fixed gear out to ten (10) miles from Castle Cape to Foggy Cape for vessels under 60 ft.
- ◆ Option 2. Establish a limited fishing zone in the Dutch Harbor area (area 9) for fixed gear out to ten (10) miles from Cape Cheerful to Umnak Pass for vessels under 60 ft.
- ◆ Option 3. Establish a zonal approach for GOA Pacific cod. Buffers zones (0-3 nm, 3-12 nm, 12-20 nm, and +20 nm) would be established as measured from land. Fixed gear would be allowed in bands < 20 nm, with band specific gear and vessel size limits. Trawl gear would be prohibited < 20 nm.

## **Alternative 5 - Critical Habitat Catch Limit Approach section 2.3.5 (p. 2-34); map 2.3.8**

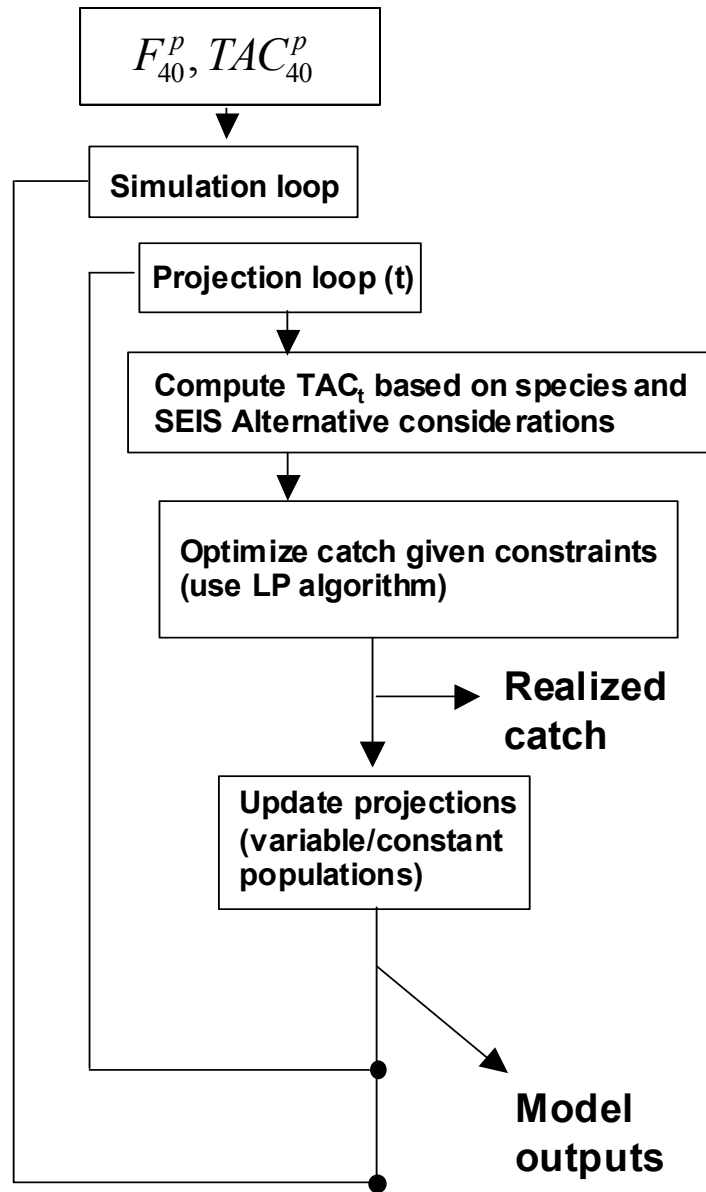
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- ◆ Developed from 2000 RPA measures for pollock and mackerel, (cod fisheries added), major measures would include:
  - 3 nm no transit zones around rookeries.
  - 10-20 nm trawl closures around rookeries.
  - 10-20 nm closures around haulouts to pollock fishing.
  - Catch distributed over seasons: 4 for pollock, 2 for mackerel, 2 for cod.
  - Catch limits established in critical habitat based on biomass estimates.
  - No pollock fishing in the Aleutian Islands.

# Target Species / Global Control Rule

Anne Hollowed





# *Stock Projections*

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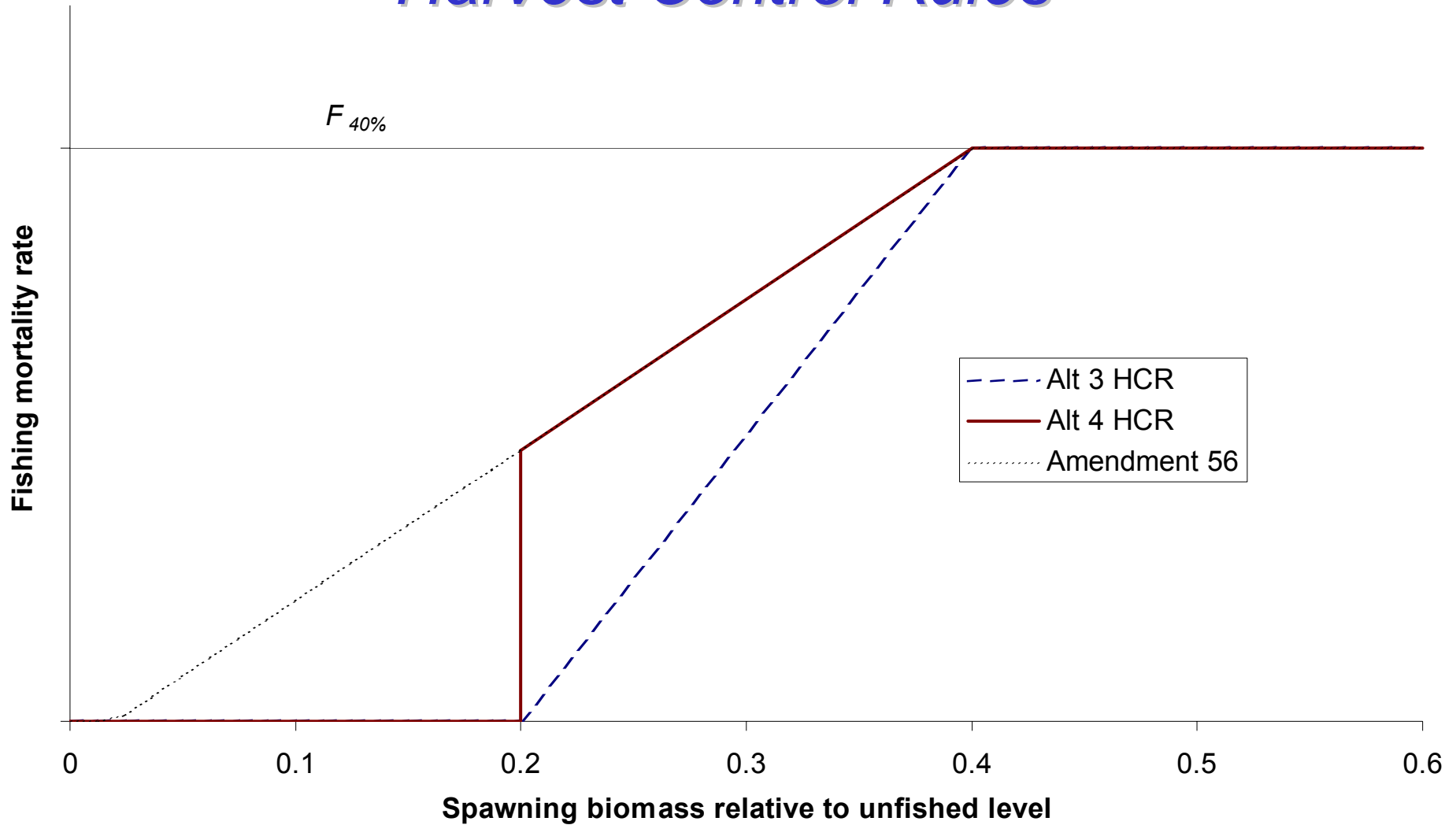
- ◆ For the stocks with age-structure information
  - Parameters and other inputs from the most recent SAFE report or from assessment scientists.
  - Begin year = 2000
  - Recruitment
    - Random based on estimates since 1978
    - no serial correlation assumed
  - $F_{ABC}$  as defined from the alternative .
- ◆ For stock where age-structure information is not available
  - ABC's are set as from Amendment 56
    - E.g., recent estimates of ABC as the upper limit on total catch.

# *Management Model*

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- ◆ Consider interactions between a large number of species, areas, and gear types.
- ◆ Maximizes catch subject to a number of constraints
- ◆ Uses bycatch data from array of species likely to be captured by different gear types
- ◆ Goal to assess cumulative effect of individual fisheries on the allowable catch of each species (or species group).

# Harvest Control Rules



# *Key Data Sources*

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- ◆ Bycatch information:
  - Observers
  - ADFG fish-ticket data
  - Processor reports
- ◆ Abundance-at-age in 2000 and recruitment level and variability
  - Stock assessments

## *Key Assumptions*

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- ◆ Within a single fishery, predicted bycatch is wholly determined by the bycatch data.
- ◆ The bycatch array is fixed over time
  - even if relative stock abundances change
- ◆ Current stock abundance levels are taken as known exactly

# Constraints

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- ◆ Acceptable biological catch (ABC) (TAC constraints)
  - As determined by control rules (e.g., Am. 56)
- ◆ Market constraints
  - Defined as limits to potential expansion (and contraction) of certain fisheries
- ◆ Gear type constraints
  - Gear allocations (e.g., for Pacific cod, sablefish)
- ◆ Prohibited species
  - Halibut most common



# David Witherell

Overview of how SSC and AP concerns were addressed

Tamra Faris

Explain the revisions underway with the  
marine mammal analysis

# Marine Mammal Evaluations - types of effects (questions)

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- 1 Is the action consistent with efforts to avoid direct interactions (**incidental take and entanglement**)?
- 2 Does the action result in fisheries harvests on prey species of importance to marine mammals, at levels that could compromise foraging success (**harvest of prey species**)?
- 3 Does the action result in temporal or spatial concentration of fishing effort in areas used for foraging (**spatial and temporal concentration**)?
- 4 Does the action modify marine mammal or forage behavior to the extent that population level impacts could occur (**disturbance**)?

# Marine Mammal analysis comprised of three tiers

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**a** Effects on seven species or species groups

Steller Sea Lion

ESA listed Great Whales

Other Cetaceans

Northern Fur Seals

Harbor Seals

Other Pinnipeds

Sea Otters

**b** Each alternative is addressed for each species or species group

**c** Each question (type of effect) is addressed for each alternative within each species or species group

# Criteria for Significance - Pinnipeds, Sea Otter

Effects	Score					
	S-	CS-	I	CS+	S+	U
Incidental take/ entanglement in marine debris	Take rate increases by >50%	Take rate increases by 25-50%	Level of take below that which would have an effect on population trajectories	NA	NA	Insufficient information available on take rates
Harvest of prey species	TAC removals of one or more key prey species increased by more than 5%	TAC removals of one or more key prey species increased or reduced from 1998 levels by less than 5%	TAC removals of one or more key prey species reduced by 5-20%	TAC removals of one or more key prey species reduced from 1998 levels by more than 20%	TAC removals of all key prey species (pollock, Pacific cod, Atka mackerel) reduced by more than 20%	Insufficient information available on key prey species
Spatial/ temporal concentration of fishery	Much more temporal and spatial concentration in all key areas	Similar temporal and spatial fishery distribution in some, but not all, key areas	Marginally less temporal and spatial concentration than 1998 fisheries	Much less temporal and spatial concentration in some, but not all key areas	Much less temporal and spatial concentration in all key areas	Insufficient information as to what constitutes a key area
Disturbance	Much more disturbance (all closed areas reopened)	Marginally more disturbance (some closed areas reopened)	Similar level of disturbance as that which was occurring in 1998	NA	NA	Insufficient information as to what constitutes disturbance

# Criteria for Significance - Pinnipeds, Sea Otter

Effects	Score					
	S-	CS-	I	CS+	S+	U
Harvest of prey species	TAC removals of one or more key prey species increased by more than 5%	TAC removals of one or more key prey species increased or reduced from 1998 levels by less than 5%	TAC removals of one or more key prey species reduced by 5-20%	TAC removals of one or more key prey species reduced from 1998 levels by more than 20%	TAC removals of all key prey species (pollock, Pacific cod, Atka mackerel) reduced by more than 20%	Insufficient information available on key prey species

# REVISED--Criteria for Significance - Pinnipeds, Sea Otter

Efficiently remove/kill prey species	Deviation of average daily removal rates is $> +251$	Deviation of average daily removal rates is $+100$ to $+250$	Deviation of average daily removal rates is $+/-100$	Deviation of average daily removal rates is $-100$ to $-250$	Deviation of average daily removal rates is $< -251$	Insufficient information available on key prey species
Harvest of prey species	Much more temporal	Similar temporal	Marginally less temporal	Much less temporal	Much less temporal	Insufficient information that rates a
spatial/temporal once off						
Disturbance						Insufficient information that rates a



# Revised Table 4.1-5 Summary of effects on Steller sea lion

Steller Sea Lion	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Incidental take/entanglement in marine debris	I	I	I	I	I
Harvest of prey species	I	I	I	I	I
Spatial/temporal concentration of fishery	CS-	CS+	CS+	I	I
Disturbance	I	I	I	I	I

S = Significant, CS = Conditionally Significant, I = Insignificant, U = Unknown, + positive, - negative

# Management and Enforcement

Galen Tromble

# Implementation Schedule

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- ◆ In order to provide vessels sufficient time to purchase and install VMS units the effective date for VMS requirements will be in mid-2002

# Reliability

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- ◆ NMFS' experience with the VMS system in Alaska since January, 2000 is that the system is highly reliable.
- ◆ At the current time, 81 vessels are operating VMS units
- ◆ Some hardware failures have occurred – most related to fluctuations in vessel power – particularly after lay-up. Many of these are preventable by turning VMS unit power on only after vessel power is stable.

# Consequences of VMS failure

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- ◆ The regulation will require that vessels operate a VMS system. The performance standard for operation is that VMS data are received by NMFS
- ◆ If the vessel operator becomes aware that the VMS system is not working, the operator must contact NMFS Office of Law Enforcement for instructions.
- ◆ There are a variety of reasons that NMFS might not receive VMS data, ranging from failure of the hardware unit to a problem with the message-processing system
- ◆ If NMFS determines that VMS data for a vessel are not being received, NMFS will contact the vessel operator (if possible) or owner and initiate a trouble-shooting process to determine the cause of the problem and to determine appropriate action to restore VMS operation.

# Fisheries and Sectors subject to VMS

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- ◆ Vessels permitted to fish only with jig gear are not subject to VMS requirements.
- ◆ All vessels with federal permits for the pollock, Pacific cod and Atka mackerel fisheries in the Central and Western GOA and the BSAI with trawl, hook-and-line or pot gear will be required to operate NMFS-approved VMS units during the time when the directed fisheries for these species are open. The requirement to operate VMS during these periods applies even if the vessel is not directed fishing for one of the three species.
- ◆ NMFS and ADFG have discussed requirements for operation of VMS in parallel State fisheries.
- ◆ NMFS will accept VMS data as meeting the requirement for processor vessels to check in and out of federal reporting areas, so NMFS expects that some processor vessels will choose to operate the VMS at all times as it is more convenient than preparing and submitting checkin/checkout reports.

# Examples

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- ◆ Example A. A vessel permitted to directed fish for all three species in the GOA and the BSAI would have to operate the VMS unit whenever a directed fishery for any of the three species was open. If the vessel operator chose to fish for rock sole while the Pacific cod fishery was open, the vessel would still be required to operate the VMS.
- ◆ Example B. A vessel permitted to directed fish for only Pacific cod in the GOA would have to operate the VMS unit only when GOA Pacific cod directed fisheries were open.

# Cumulative Impacts

John Isaacs



# Cumulative Impacts

## *Requirements of NEPA*

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- ◆ An environmental assessment must consider cumulative effects when determining whether an action significantly affects environmental quality
- ◆ If it is reasonable to anticipate cumulatively significant impacts, an environmental impact statement must be prepared

***CEQ definition (40 CFR 1508.25)***

# **Cumulative Impacts**

## *Requirements of NEPA*

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“...the most devastating environmental effects may result not from the direct effects of a particular action but from the combination of individually minor effects of multiple actions over time.”

***Considering Cumulative Effects under NEPA***  
***CEQ 1997***

# **Cumulative Impacts**

## *Requirements of NEPA*

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Cumulative impacts are defined as:

“... the impact on the environment that results from the incremental or synergistic impact of the action when added to other past, present, and reasonably foreseeable future actions.”

***CEQ definition (40 CFR 1508.7)***

# Cumulative Impacts

## *Requirements of NEPA*

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- ◆ Consider the aggregate of past, present and reasonably foreseeable future actions, regardless of which agency or persons undertakes such actions
- ◆ Consider the total effect, including both direct and indirect effects on a given resource, ecosystem and human community, of all actions taken

# **Cumulative Impacts**

## *Suggested CEQ Guidelines*

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- 1) Identify the significant issues
- 2) Establish the geographic and temporal scopes of analysis
- 3) Identify other potential actions with incremental or synergistic effects
- 4) Characterize the affected resources

# **Cumulative Impacts**

## *Suggested CEQ Guidelines*

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- 5) Characterize the stresses affecting these resources
- 6) Define baseline conditions
- 7) Identify important cause-and-effect relationships
- 8) Determine the magnitude and significance of the cumulative effects

# **Cumulative Impacts**

## *Suggested CEQ Guidelines*

---

- ◆ The project proponent should avoid, minimize, or mitigate adverse significant effects of a proposed action by modifying or adding alternatives
- ◆ Mitigation and enhancement strategies should focus on cause and effect pathways



# Cumulative Impacts

## *Methodology - Terminology*

---

- ◆ incremental or synergistic impact of the action...
  - *Start with the categories of direct and indirect effects of the proposed action and alternatives*
  - *Look for external factors where there are potential additive/incremental and synergistic/interactive effects*
- ◆ ...when added to other past, present, and reasonably foreseeable future actions
  - *Past actions may have a lingering effect*
  - *Future actions must be reasonably foreseeable*

# Cumulative Impacts

## *Methodology - Analytical Steps*

---

### **1) DIRECT AND INDIRECT EFFECTS**

*Start with the potential direct and indirect effects of each the five alternatives*

### **2) EXTERNAL FACTORS**

*Identify external past, present, and reasonably foreseeable external factors that could have additive or synergistic effects such as other fisheries, other human activities, and natural phenomena and trends*

# Cumulative Impacts

## *Methodology - Analytical Steps*

---

### **3) SCREENING TABLES**

*Use a tabular structure to screen whether external factors have an incremental or synergistic effects with identified direct and indirect effects of the alternatives*

### **4) EVALUATE SIGNIFICANCE OF POTENTIAL EFFECTS**

*Evaluate the significance of the potential cumulative effects using criteria appropriate to the resource category in question*

# Cumulative Impacts

## *Methodology – External Factors*

---

### ◆ Biological Environment

- Other Fisheries (state, federal, and foreign)
- Climate Effects (short and long -term climate and regime shifts)
- Life Cycle Effects
- Trophic Interactions
- Pollution
- Commercial and Subsistence Harvests (where appropriate)

### ◆ Social Environment

- Other Fisheries (state, federal, and foreign)
- Other Economic Development Activities (effects on employment and services)
- Other Revenue Payments and Sources



## Cumulative effects – all alternatives

[illegible]

# Cumulative Impacts

## section 4.13

	<i>Section</i>	<i>Page</i>
◆ Marine Mammals	4.13.2	4-373
◆ Target Fish Species	4.13.3	4-420
◆ Non-specified Fish	4.13.4	4-452
◆ Forage Fish	4.13.5	4-453
◆ Prohibited Species (by species)	4.13.6	4-453
◆ ESA Listed Pacific Salmon	4.13.7	4-476
◆ Seabirds	4.13.8	4-477
◆ Benthic Habitat	4.13.9	4-487
◆ Ecosystem	4.13.10	4-497
◆ State Managed Fisheries	4.13.11	4-512
◆ Management and Enforcement	4.13.12	4-512
◆ Socioeconomic Cumulative Effects	4.13.13	4-512



# Cumulative Impacts

## *Potential Outcomes*

---

- ◆ Insignificant direct and indirect impacts, insignificant cumulative impacts
- ◆ Significant direct and indirect impacts, insignificant cumulative impacts
- ◆ Insignificant direct and indirect impacts, significant cumulative impacts
- ◆ Significant direct and indirect impacts, significant cumulative impacts

# Cumulative Impacts

## *Potential Outcomes*

---

### ◆ **Conditional significance** –

- Where quantitative data is insufficient and conclusions of significant are based on assumptions or “conditions”

### ◆ **Unknown** –NEPA requires the following:

- State what information is incomplete and unreliable
- State the relevance of missing to evaluating the potential significance of effects
- Identify steps and studies necessary to obtain the missing information

# Cumulative Impacts

## *Substantive Findings – Marine Mammals*

### *Steller Sea Lions*

### *Significant Direct/Indirect Cumulative Impacts*

Direct/Indirect Category	Past Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Incidental Take	Y	I N	I N	I N	I N	I N
Prey Availability	Y	CS- Y	CS+ Y	I Y	I Y	CS- Y
Spatial/ Temporal	Y	CS- Y	CS+ N	I Y	I Y	CS- Y
Disturbance	Y	I N	I N	I N	I N	I N

# Cumulative Impacts

## *Substantive Findings – Marine Mammals*

### *Northern Fur Seals*

### *Significant Direct/indirect Cumulative Impacts*

Direct/Indirect Category	Past Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Incidental Take	Y	I N	I N	I N	I N	I N
Prey Availability	Y	CS- Y-	CS- Y-	CS- Y-	CS- Y-	CS- Y-
Spatial/ Temporal	Y	CS- Y-	CS- N	CS- Y-	CS- Y-	CS- Y-
Disturbance	Y	CS- N	CS- N	CS- N	CS- N	CS- N

# Cumulative Impacts

## *Substantive Findings – Target Fish*

---

### *Atka Mackerel GOA*

### *Significant Direct/Indirect Cumulative Impacts*

Direct/Indirect Category	Past Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Fishing Mortality	Y	U U	U U	U U	U U	U U
Spatial/ Temporal	Y	U U	U U	U U	U U	U U
Habitat Suitability	Y	U U	U U	U U	U U	U U
Prey Availability	Y	U U	U U	U U	U U	U U

# Cumulative Impacts

## *Substantive Findings – Prohibited Species*

---

### ◆ Other King Crab

- Alternative 2, CS- for direct, indirect, and cumulative bycatch; all alts unknown for competition for prey

### ◆ Tanner Crab

- Alternative 2, 3, & 4 CS+ for direct, indirect, and cumulative bycatch; all alts unknown for competition for prey

### ◆ Herring

- Unknown for competition for prey

### ◆ Chinook Salmon

- Unknown spatial/temporal and competition for prey
- Bycatch: CS- for Alternative 3; CS+ for other alternative

### ◆ Seabirds

- Short-tailed Albatross: Alternative 1 CS- for take

# Cumulative Impacts

## *Substantive Findings – Habitat*

### *Marine Benthic Habitat*

### *Significant Direct/Indirect Cumulative Impacts*

Direct/Indirect Category	Past Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
HAPC damage mobile gear	Y	CS- Y-	S+ Y+	CS+ N	CS+/- U	CS- Y-
HAPC damage fixed gear	Y	CS- Y-	CS+ N	I N	CS+/- U	CS- Y-
Substrate mod. mobile gear	Y	CS- Y-	CS+ N	CS+ N	CS+/- U	CS- Y-
Substrate mod. fixed gear	N	I N	I N	I N	I N	I N
Changes to species mix	Y	CS- Y-	CS+ N	CS+ N	CS+/- U	CS- Y-



# Cumulative Impacts

## *Substantive Findings – Ecosystem*

### *Biological Diversity*

### *Significant Direct/Indirect Cumulative Impacts*

Direct/Indirect Category	Past Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
<b>Species Diversity</b>	Y	CS- Y+/-	CS+ Y+/-	CS+ Y+/-	CS+ Y+/-	CS+ Y+/-
<b>Functional Diversity</b>	Y	I Y-	I N	I N	I N	I N
<b>Genetic Diversity</b>	Y	I N	CS+ N	CS+ N	CS+ N	CS+ N

# Cumulative Impacts

## *Substantive Findings – Ecosystem*

### *Predator/Prey Relationship*

### *Significant Direct/Indirect Cumulative Impacts*

Direct/Indirect Category	Past Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
<b>Pelagic Forage Availability</b>	Y	S+ Y+/-	S+ Y+/-	S+ Y+/-	S+ Y+/-	S+ Y+/-
<b>Spatial/ temporal Concentration</b>	Y	CS- Y-	CS+ N	CS+ N	CS+ N	CS+ N
<b>Removal of Top Predators</b>	Y	I N	I N	I N	I N	I N
<b>Intro of Non- Native Species</b>	Y	CS- Y+/-	I N	I N	I N	I N

# Cumulative Impacts

## *Substantive Findings – Socioeconomic*

### *Significant Direct/Indirect Cumulative Impacts*

### *Fishing Industry Sectors*

Direct/Indirect Category	Past Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Existence Benefits	Y	CS- Y-	CS+ N	CS+ N	CS+ N	CS+ N
Non-market Subsistence	Y	CS- U	CS+ N	CS+ N	CS+ N	CS+ N
Non-consumptive Eco-tourism	Y	CS- Y-	CS+ N	CS+ N	CS+ N	CS+ N
Harvests & Fish Prices	Y	CS+ N	S- Y-	S- Y-	NS N	CS- N
Operating Costs	Y	CS+ N	S- Y-	S- Y-	S- Y-	CS- Y-
Groundfish Product Value	Y	CS+ Y+	CS- Y-	CS- Y-	CS- Y-	CS- Y-

# Cumulative Impacts

## *Substantive Findings – Socioeconomic*

### *Fishing Industry Sectors*

### *Significant Direct/Indirect Cumulative Impacts*

Direct/Indirect Category	Past Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Safety Impacts	Y	CS- N	CS- Y-	CS- Y-	CS- Y-	CS- Y-
Impacts on Related Fisheries	Y	U U	U U	U U	U U	U U
Costs to Consumers	Y	CS+ Y+	CS- Y-	CS- Y-	NS N	NS N
Management and Enforcement Costs	Y	I N	S- Y-	S- Y-	S- N	S- N
Excess Capacity	Y	CS- Y-	S- Y-	S- Y-	NS Y-	CS- Y-
Prohibited Species Bycatch and Discards	Y	I U	U U	U U	U U	U U

# Cumulative Impacts

## *Substantive Findings – Socioeconomic*

### *Regions and Communities*

### *Significant Direct/Indirect Cumulative Impacts*

Direct/Indirect Category	Past Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Total Regionally - owned CV Harvest \$	Y	S+ Y-	S- Y-	S- Y-	I Y-	CS- Y-
Total Ex-Vessel Value to Shore Based Processors in Region	Y	S+ Y-	S- Y-	S- Y-	I Y-	CS- Y-
Total Shore-Based Processing Volume in Region	Y	S+ Y-	S- Y-	S- Y-	I Y-	CS- Y-
Total & Processing Payments to Labor to Accruing to Region	Y	S+ Y-	S- Y-	S- Y-	I Y-	CS- Y-
Total & Processing Payments to Labor to Accruing to Region	Y	S+ Y-	S- Y-	S- Y-	I Y-	CS- Y-

# Cumulative Impacts

## *Preferred Alternative*

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### ◆ Marine Mammals

- significant adverse cumulative effects in prey availability and spatial temporal due to external factors (similar to 1, 3, & 5)

### ◆ Habitat

- cumulative effects generally unknown due to complicated pattern of open and closed areas

### ◆ Ecosystem

- comparable to other alternatives

### ◆ Socioeconomics

- significant adverse cumulative effects due to trends in other fisheries; better on communities and regions
- some regions and sectors will suffer more harm than others

# Cumulative Impacts

## *Conclusions*

---

- ◆ The role of cumulative effects analysis is to indicate when direct/indirect actions, in conjunction with external factors, cross a threshold of significance
- ◆ Controlling cumulatively significant effects may not be within the control of fisheries management
- ◆ Reassess cumulative effects after implementation of specific management measures and redistribution of effort
- ◆ Monitor trends and issues that are potentially cumulative in nature

# Economics Impacts

Lew Queirolo and Ben Muse



## Under revision:

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- ◆ Sensitivity Analysis of Atka mackerel results
- ◆ Elaboration of management and enforcement expenses borne by industry
- ◆ Safety discussion extended to address 99' exemption in the SCA

## Under revision:

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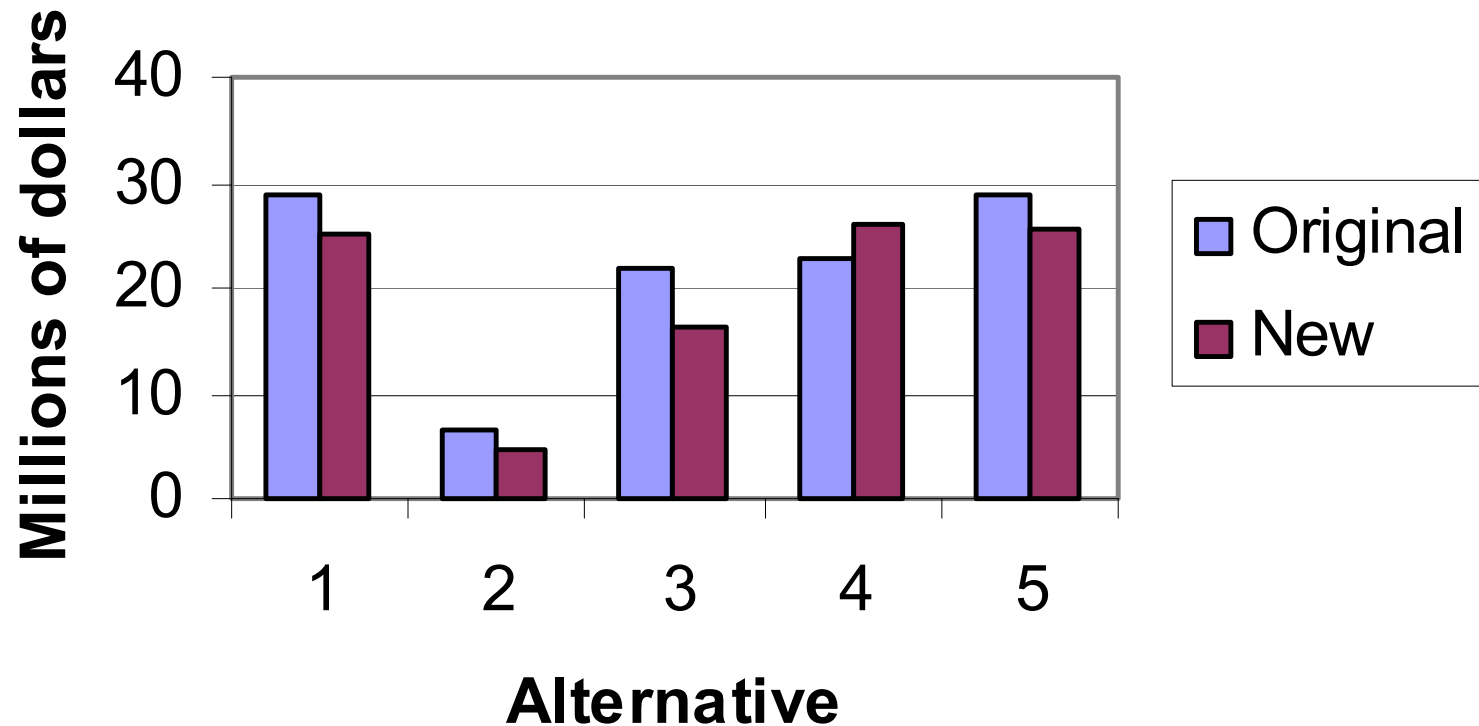
- ◆ CDQ related issues (employment, impacts on CDQ owned and operated vessels, plants, etc.)
- ◆ Trip limits, exclusive registration issue in the GOA Pacific cod fishery
- ◆ Platooning in the Aleutian Islands Atka mackerel fishery

# Atka mackerel sensitivity analysis

---

- ◆ Original “surface area”
  - State stat areas
  - Divided in CH and non-CH closed areas
  - Harvest from stat area assigned to CH areas in proportion to CH surface area
- ◆ New allocation procedure based on observer reports

## Sensitivity analysis of Atka results (Value of TAC minus revenues "at risk")



# Private sector management and enforcement costs

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- ◆ The RIR is being revised to incorporate a discussion of management and enforcement costs borne by the private sector.

# Specific estimates

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## ◆ VMS

- Investment: \$1.5 million
- Annually: \$0.3 million
- 5 year present value: \$2.3 million

## ◆ Daily observer costs

- Annually: \$0.35 to \$0.5 million
- 5 year present value: \$1.7 to 2.4 million

# Observer estimates

---

- ◆ Underestimate of true costs
- ◆ Doesn't include logistic and transportation expenses for observers which we can't estimate
- ◆ Observer costs for small vessels contemplated here are likely to be higher than for the larger vessels covered in the past

# CDQ Fisheries

Obren Davis



# Socio Impact Assessment Environmental Justice Analysis

Michael Downs

# Three new or replacement Social Impact Assessment sections:

---

- ◆ (1) Section 3.2.12 - Existing Social Conditions
  - 3.12.2.9 CDQ Region Existing Conditions
  - 3.12.2.10 Environmental Justice Existing Conditions

# Three new or replacement Social Impact Assessment sections (cont.):

---

- ◆ (2) Section 4.2.12 - Social Impact Assessment
  - 4.12.2.2.7 CDQ Region Effects
  - 4.12.2.3 Environmental Justice Effects

# Three new or replacement Social Impact Assessment sections (cont.):

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- ◆ (3) Appendix F - Social Impact Assessment Appendices
  - Appendix F3: Effects of the Proposed Alternatives on Subsistence (revised)
  - Appendix F4: CDQ Region and Program Existing Conditions (new)

# Expanded/Added Social Impact Assessment Analytic Areas

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- ◆ CDQ Region Impacts
- ◆ Environmental Justice Impacts
- ◆ Subsistence Impacts

# CDQ Region Impacts

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- ◆ Existing conditions cross reference in Section 3.12.2.9
- ◆ New existing conditions section in Appendix F(4)

## CDQ Appendix F(4) sections:

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- ◆ CDQ allocations by species and group
  - Volume and value of CDQ allocations by species
  - Wholesale value by target fishery and month
- ◆ CDQ communities, population, group membership, group profiles

# CDQ Appendix F(4) sections (cont.):

---

- ◆ Economic Impacts of the CDQ program

- Revenue generation

- Asset accumulation

- Investments

- vessel acquisitions

- processing plant acquisitions

- volume and value of groundfish processed by catcher-processor vessels and shoreplants with CDQ equity interest

- volume and value of groundfish harvested by catcher vessels with CDQ equity interest



## CDQ Appendix F(4) sections (cont.):

---

- ◆ Employment and income
- ◆ Training and education
- ◆ Indirect employment and income effects

## CDQ Region Effects (Section 4.12.2.2.7):

---

- ◆ Quantification of impacts:
  - Output tables with 21 socioeconomic variables by species produced for Alternative 1, Alternative 2, and Alternative 4 high and low cases, consistent with approach used for other regions
  - Important caveat: entities with minority ownership produce same tabular results as majority or full ownership
  - Therefore: (1) CDQ region results are overstated rather than understated; and (2) results are not additive with other regions

# CDQ Region Effects

## (Section 4.12.2.2.7, cont.):

---

- ◆ Quantification of impacts (cont.):
  - Additional tables produced with unique CDQ region variables by species by alternative (high and low cases):
    - CDQ allocation (MT)
    - CDQ allocation ex-vessel revenue (\$)
    - CDQ allocation wholesale revenue (\$)
    - CDQ royalties (\$)
    - CDQ royalties (\$/MT)

## CDQ Region Effects (Section 4.12.2.2.7, cont.):

---

### ◆ Alternative 2 impacts:

- CV harvests decline 28 to 51 percent
- Total processing payments to labor (all sectors) decline 20 percent to 32 percent
- Employment declines mirror payments to labor declines
- Allocations decline 23 to 43 percent
- Ex-vessel revenue and wholesale revenue decline 19-41 and 21-42 percent, respectively
- Overall CDQ royalties decline 21-42 percent

# CDQ Region Effects (Section 4.12.2.2.7, cont.):

---

## ◆ Alternative 4 impacts:

- CV harvests decline 0 to 4 percent
- Total processing payments to labor (all sectors) decline 0 percent to 3 percent
- Employment declines mirror payments to labor declines
- Allocations would change by an increase of 1 percent to a decline of 6 percent.
- Ex-vessel revenue and wholesale revenue change between decreasing 0-9 percent and decreasing -1 to 7 percent, respectively
- Overall CDQ royalties decline 0-7 percent

# Environmental Justice Impacts

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- ◆ New existing conditions discussion Section 3.12.2.10
- ◆ New impacts discussion Section 4.12.2.3

# Environmental Justice Existing Conditions (Section 3.12.2.10):

---

- ◆ Definition and regulatory context
  - requires federal agencies to address environmental justice concerns by identifying “disproportionately high and adverse human health and environmental effects...on minority populations and low-income populations.”
  - Executive Order 12898 (59 FR 7629 [1994])
  - (New intro to Section 3.12.1 specifically identifies social and economic assessment requirements under NEPA (40 CFR § 1508.8) and the MSA/National Standard 8 (Sec. 301(a)(8)) as well as EO 12898)

# Environmental Justice Existing Conditions (cont.):

---

## ◆ Community variations

- Wide geographic range of communities
- Wide social and economic structure range of communities
- Wide range of nature and intensity of ties to the groundfish fishery
- Focus on Alaska Peninsula/Aleutian Islands, Kodiak, and Washington Inland Waters regions.



# Environmental Justice Existing Conditions (cont.):

## ◆ Alaska Peninsula/Aleutian Islands region

**Table 3.12-44. Ethnic Composition of Population, Selected Alaska Peninsula/Aleutian Island Region Communities, 2000**

Race/Ethnicity	Unalaska		Akutan		King Cove		Sand Point	
	N	%	N	%	N	%	N	%
White	1,893	44.2%	168	23.6%	119	15.0%	264	27.7%
African American	157	3.7%	15	2.2%	13	1.6%	14	1.5%
Native American/Alaska Native	330	7.7%	112	15.7%	370	46.7%	403	42.3%
Nat. Hawaiian/Other Pac Islander	24	0.6%	2	0.3%	1	0.1%	3	0.3%
Asian	1,312	30.6%	275	38.6%	212	26.8%	221	23.2%
Some Other Race	399	9.3%	130	18.2%	47	5.9%	21	2.2%
Two Or More Races	168	3.9%	11	1.5%	30	3.8%	26	2.7%
Total	4,283	100%	713	100%	792	100%	952	100%
Hispanic*	551	12.9%	148	20.8%	59	7.4%	129	13.6%

Source: U.S. Bureau of Census.

\* 'Hispanic' is an ethnic category and may include individuals of any race (and therefore is not included in the total as this would result in double counting).

# Environmental Justice Existing Conditions, Alaska Peninsula/Aleutian Islands region (cont.)

---

- ◆ Wide demographic variation, Alaska Native/non-Native ratio, etc.
- ◆ All have less than 50 percent non-minority population
- ◆ Range of income, but low percent unemployed and percent poverty
- ◆ Very different populations in group quarters and non-group quarters

# Environmental Justice Existing Conditions, Alaska Peninsula/Aleutian Islands region (cont.)

## ◆ Group quarters versus non-group quarters example

- Akutan one end of the continuum
- Note 1990 not 2000 data

**Table 3.12-49. Ethnicity and Group Quarters Housing Information, Akutan, 1990**

	Total Population		Group Quarters Population		Non-Group Quarters Population	
	Number	Percent	Number	Percent	Number	Percent
Akutan	227	37.52	212	42.32	15	17.05
White	6	0.99	6	1.20	0	0.00
Black	80	13.22	7	1.40	73	82.95
American Indian, Eskimo, Aleut	247	40.83	247	49.30	0	0.00
Asian or Pacific Islander	29	4.79	29	5.79	0	0.00
Other race	589	100.00	501	100.00	88	100.00
Total Population	45	7.44	45	8.98	0	0.00
Hispanic origin, any race	342	56.53	298	59.48	44	50.00
Total Minority Pop	247	40.83	203	40.52	44	50.00
Total Non-Minority Pop (White Non-Hispanic)						

Source: Census 1990 STF2

# Environmental Justice Existing Conditions, Alaska Peninsula/Aleutian Islands region (cont.)

---

- ◆ Industry provided data, 2000, four major plants
  - 79 percent of workforce comprised of minority individuals
  - Range from about three-quarters to over 90 percent minority at individual plants
  - Detail of data varied, Asian and Hispanic ancestry largest groups represented

# Environmental Justice Existing Conditions (cont.):

## ◆ Kodiak Region - City of Kodiak population

**Table 3.12-55 Ethnic Composition of Population**  
**Kodiak City; 2000**

Race/Ethnicity	2000	
	N	%
White	2,939	46.4%
African American	44	0.7%
Native American/Alaska Native	663	10.5%
Native Hawaiian/Other Pacific Islander	59	0.9%
Asian	2,010	31.7%
Some Other Race	276	4.3%
Two or More Races	343	5.4%
Total	6,334	100%
Hispanic*	541	8.5%

Source: U.S. Bureau of Census.

\* 'Hispanic' is an ethnic category and may include individuals of any race (and therefore is not included in the total as this would result in double counting).

# Environmental Justice Existing Conditions, Kodiak region (cont.):

**Table 3.12-58. Ethnicity and Group Quarters Housing Information, Kodiak, 1990**

Kodiak City	Total Population		Group Quarters Population		Non-Group Quarters Population	
	Number	Percent	Number	Percent	Number	Percent
White	4028	63.28	192	53.93	3836	63.84
Black	29	0.46	3	0.84	26	0.43
American Indian, Eskimo, Aleut	811	12.74	21	5.90	790	13.15
Asian or Pacific Islander	1282	20.14	118	33.15	1164	19.37
Other race	197	3.10	22	6.18	175	2.91
Total Population	6365	100.00	356	100.00	6009	100.00
Hispanic origin, any race	407	6.39	42	11.80	365	6.07
Total Minority Pop	2429	38.16	181	50.84	2248	37.41
Total Non-Minority Pop (White Non-Hispanic)	3936	61.84	175	49.16	3761	62.59

Source: Census 1990 STF2

# Environmental Justice Existing Conditions, Kodiak region (cont.):

---

- ◆ Industry provided 2000 data
  - Cannot release figures due to confidentiality restrictions
  - At least some plants have minority workforce proportions in the range seen in the Alaska Peninsula/Aleutian Islands region

# Environmental Justice Existing Conditions (cont.)

## ◆ Washington Inland Waters region

**Table 3.12-60. Ethnic Composition of Population, Seattle-Tacoma CMSA, 2000**

Race/Ethnicity	2000	
	N	%
White	2,819,296	79.3%
African American	165,938	4.7%
Native Amer/Alaskan	41,731	1.2%
Asian/Pacific Islands*	300,533	8.5%
Other**	227,263	6.4%
Total	3,554,760	100%
Hispanic***	184,297	5.2%
Total minority population	816,858	23.0%
Total non-minority population	2,737,902	77.0%

Source: U.S. Bureau of Census.



# Environmental Justice Existing Conditions, Washington Inland Waters region (cont.)

---

- ◆ Group quarters housing data not relevant to this analysis
- ◆ Industry provided data forthcoming

# Environmental Justice Existing Conditions (cont.)

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## ◆ CDQ region

- Discussed in previous section
- EJ issue due to demographics and economics
- Communities are 86.8 percent Alaska Native
- Limited economic development and lack of employment/income was reason for formation of the CDQ program

# Environmental Justice Effects

## (Section 4.12.2.3)

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- ◆ Community level environmental justice impacts
- ◆ Catcher vessel fleet related environmental justice impacts
- ◆ Catcher-processor fleet related environmental justice impacts
- ◆ Shore processor related environmental justice impacts
- ◆ CDQ related environmental justice impacts
- ◆ Subsistence related environmental justice impacts

# Environmental Justice Effects (cont.)

---

- ◆ Community level environmental justice impacts (general local economy, tax revenues, etc.)

- Alaska Peninsula/Aleutian Islands region - Alternative 2 impacts

King Cove and Sand Point community level impacts would be environmental justice impacts due to Alaska Native plurality

Unalaska and Akutan different structure, less clearly community specific environmental justice impacts per se.

Aleutians East Borough communities that are predominately Alaska Native will realize impacts through loss of borough revenues.

# Environmental Justice Effects, community level environmental justice impacts (cont.)

---

- ◆ Kodiak region - City of Kodiak largely non-Native, therefore not environmental justice issue at the community level.
- ◆ Alaska Southcentral and Southeast regions, and the Washington and Oregon regions are not expected to experience high and adverse impacts at the community level.

# Environmental Justice Effects (cont.)

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- ◆ Catcher vessel fleet related environmental justice impacts
  - Environmental justice impacts likely for catcher vessel fleet for King Cove and Sand Point under Alternative 2, available data not clear for Unalaska/Dutch Harbor.
  - Not likely for other regions under Alternative 2
  - Not likely for any region or community for Alternative 4.

# Environmental Justice Effects (cont.)

---

- ◆ Catcher-processor vessel fleet related environmental justice impacts
  - Analysis remains to be completed, pending receipt of industry data

# Environmental Justice Effects (cont.)

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- ◆ Shore processor related environmental justice impacts
  - High and adverse impacts will disproportionately accrue to minority labor force in major shoreplant communities in APAI region under Alternative 2.
  - Estimated 1,200-2,200 jobs lost in this sector in this region for Alternative 2 are overwhelmingly held by minority individuals.
  - Impacts accentuated by relative disadvantage in obtaining work outside the seafood industry (e.g., language and alternative job skills).
  - Situation is similar, but on a smaller scale, for Kodiak region.
  - Similar impacts not anticipated for Alternative 4.
  - No EJ impacts to this sector anticipated for other regions for either Alternative 2 or Alternative 4.



# Environmental Justice Effects (cont.)

---

- ◆ CDQ related environmental justice impacts
  - CDQ impacts under Alternative 2, as described in Section 4.12.2.2.7, will result in disproportionate high and adverse impacts to the predominately Alaska Native CDQ region communities.
  - Impacts deriving from Alternative 4 are not likely to be high and adverse or disproportionately felt in the CDQ region.

# Environmental Justice Effects (cont.)

---

- ◆ Subsistence related environmental justice impacts
  - Environmental justice issue because of disproportionate involvement of Alaska Native population.
  - Direct effects unlikely.
  - Indirect effects due to lost opportunities for joint commercial and subsistence production are possible, and would most likely occur in King Cove, Sand Point, and Kodiak.
  - Given population composition, these are environmental justice impacts for King Cove and Sand Point.
  - Environmental justice impacts related subsistence joint production issues are unlikely for other regions under Alternative 2, or for communities in any region under Alternative 4.
  - Indirect effects on subsistence resulting from a loss of income that would otherwise be directed toward subsistence pursuits cannot be quantified with available data, but may occur in any Alaska region.

# Effects of the proposed alternatives on subsistence use of resources (Appendix F(3))

---

- ◆ Potential effects on groundfish subsistence use (expanded)
- ◆ Potential effects on subsistence use of Steller sea lions (expanded)
- ◆ Indirect effects on other subsistence activities (new)

# Effects of the proposed alternatives on subsistence use of resources (cont.)

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- ◆ Direct negative impacts on groundfish and Steller sea lion subsistence are unlikely
- ◆ Assessment of indirect effects is less straightforward. These effects include:
  - Impacts to other subsistence pursuits as a result of loss of income from the commercial groundfish fishery.
  - Impacts to other subsistence pursuits as a result of the loss of opportunity to use commercial fishing gear and vessels for subsistence pursuits.

# Effects of the proposed alternatives on subsistence use of resources – indirect effects (cont.)

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- ◆ Loss of income resulting in funds not being available for subsistence pursuits is a very complex issue.
  - Loss of income can impact communities ranging across Alaska and the Pacific Northwest.
  - Income may or may not be used for subsistence expenses.
  - Income specifically contributed by groundfish pursuits may be a larger or smaller proportion funds used for subsistence by individuals or families.

# Effects of the proposed alternatives on subsistence use of resources – indirect effects (cont.)

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- ◆ The relationship between loss of income to specific subsistence outcomes is not entirely straightforward.
  - Income is required for contemporary subsistence pursuits. However, factors that influence participation in subsistence activities are many and complex.
  - An increase of income may decrease subsistence activity or an increase in subsistence activity; a decrease in income may decrease subsistence involvement or increase subsistence involvement.

# Effects of the proposed alternatives on subsistence use of resources – indirect effects (cont.)

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- ◆ Income associated with the groundfish fishery can derive from direct participation, investment, and/or control of quota.
- ◆ CDQ communities represent a special case as communities where subsistence is heavily practiced and that benefit from the fishery primarily through investment and control of quota.
- ◆ Different CDQ groups have chosen different organizational structures and strategies. As a result, there are effectively different levels of income to individuals and families in different CDQ communities.
- ◆ CDQ programs focused on employment and training may, in turn, indirectly influence individual subsistence spending and participation decisions.



# Effects of the proposed alternatives on subsistence use of resources – indirect effects (cont.)

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- ◆ Loss of opportunity for joint production applies to groundfish communities with direct participation in the fishery.
  - Not all vessels are used for subsistence in addition to commercial fishing.
  - Depending on the community, a greater or lesser proportion of fleet engaged in the local commercial groundfish fishery is a non-resident fleet.
  - Joint production can occur in at least two fundamentally different ways.
    - Subsistence fish can be retained during what are otherwise commercial trips
    - Separate trips may be taken that focus on subsistence.



# Effects of the proposed alternatives on subsistence use of resources – indirect effects (cont.)

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- ◆ Trip specifically dedicated to subsistence are generally uneconomic for larger vessels.
- ◆ Smaller vessels are most likely to be involved in joint production.
- ◆ Smaller vessel classes are less likely to be narrowly specialized than the larger vessels.
- ◆ Nearly all of the smaller class vessels are also involved in some or all of the salmon, halibut, sablefish, and herring fisheries.
- ◆ Joint production opportunities would presumably still exist during pursuit of other fisheries.
- ◆ The time of the year that the vessel would be available for joint production may decrease if the reduction of the commercial groundfish fishery were of a sufficient magnitude.

# Effects of the proposed alternatives on subsistence use of resources – indirect effects (cont.)

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- ◆ In practical terms, joint production opportunities vary by gear type as well as vessel size.
- ◆ Commercial vessel owners resident in communities tend to own skiffs for subsistence pursuits, so if the larger commercial vessel is not available, it will not mean the discontinuation of subsistence efforts.
- ◆ CDQ owned vessels that participate in the commercial groundfish fishery largely do not participate in subsistence activities.

# Effects of the proposed alternatives on subsistence use of resources – indirect effects (cont.)

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- ◆ Community level joint production impacts
  - In the case of Unalaska, none of the large commercial vessels that deliver groundfish to the local processing plants are owned or crewed by residents of the community.
  - A community small boat fleet does jig for cod, although the most recent data available suggest that none or very few of small boat owners derive their income exclusively from commercial fishing.
  - The fact that commercial fishing for small boat owners is generally one part of a (variable) multiple income source strategy of piecing together a living suggests that even if there were a partial reduction opportunity to fish, there would still be incentives to continue to fish. If at least some fishing took place, the opportunity would continue to exist for joint commercial/subsistence production.

# Effects of the proposed alternatives on subsistence use of resources – indirect effects - community level joint production impacts (cont.)

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- ◆ In Akutan, the fleet that delivers at the local processing facility is a non-residential fleet.
- ◆ Akutan's small boat fleet is comprised nearly exclusively of open-skiff type of vessels that generally do not deliver groundfish to the plant, so there would be no joint production impacts.

# Effects of the proposed alternatives on subsistence use of resources – indirect effects - community level joint production impacts (cont.)

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- ◆ In the case of Sand Point and King Cove, there is a residential fleet that does deliver groundfish in significant volume to the plants.
- ◆ Joint production related impacts are likely for at least a portion of the local fleet.

# Effects of the proposed alternatives on subsistence use of resources – indirect effects - community level joint production impacts (cont.)

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- ◆ For Kodiak, similar to Sand Point and King Cove, there is a residential fleet that delivers significant amounts of groundfish to the local processing plants.
- ◆ Whatever indirect subsistence impacts that do occur in this region as a result of the alternatives are likely to be concentrated in the City of Kodiak itself.

# Effects of the proposed alternatives on subsistence use of resources – indirect effects - community level joint production impacts (cont.)

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- ◆ In summary, the indirect impact of the alternatives on subsistence is difficult to assess.
- ◆ Impacts are likely to be concentrated among small vessel owners in a relatively small number of communities
- ◆ Indirect impacts through loss of income may have impacts on subsistence pursuits in a wider range of communities, including the CDQ communities.

# Summary of SEIS Remaining Issues and Schedule

Tamra Faris



# Comparison of the Alternatives

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- ◆ Table ES-2 summarizes all effects ratings for direct and indirect effects
- ◆ Trade-off analysis (comparisons of the differences in ratings for each alternatives) was applied to the ratings in Table ES-2
- ◆ Alternatives 1, 3, and 5 can be set aside due to ESA noncompliance concerns, lesser interest by the Council and public, and consideration of purpose and need
- ◆ Alternatives 2 and 4 compared based on results of trade-off analysis, ESA compliance, specific socio-economic data (Table ES-3), and cumulative effects

# Preferred Alternative

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- ◆ Based upon the balanced consideration of direct, indirect, and cumulative effects of the five alternatives; compliance with the ESA; and socio-economic consequences, Alternative 4 has been identified as the preferred alternative
- ◆ Between draft and final the alternative designated as preferred may change

# Remaining Needs for the EIS

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- ◆ Consistency review of the entire analysis
- ◆ Receive comments, respond to comments, incorporate necessary changes
- ◆ Final Section 7 Biological Opinion
- ◆ Resolve remaining issues:
  - 1 Regulations of parallel fisheries inside 3nm
  - 2 Monitoring program under incidental take permit

# Final SSL Protection Measures Time Schedule

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- ◆ August 31 - Notice of Availability of Draft SEIS  
day 1 of 45 day public comment period
- ◆ October 15 - Last day public comment period
- ◆ October 15-November 9 - Review comments,  
respond to comments, and prepare Final SEIS
- ◆ November 30 - Notice of Availability of Final SEIS
- ◆ No later than December 31 - Record of Decision
- ◆ January 1 - Emergency Rule in place for Federal  
Groundfish Fisheries

# Record of Decision

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- a State what the decision was
- b Identify all alternatives considered
  - specify the environmentally preferable alternative
- c State whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why not.

# Environmentally Preferable

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- ◆ The alternative the best promotes NEPA's goals
- ◆ The alternative that causes the least damage to the environment and best protects natural and cultural resources.
- ◆ Subjective
- ◆ May be more than one (one may be preferable for some environmental resources while another may be preferable for other resources)
- ◆ Economic considerations generally left out of the selection criteria for environmentally preferable

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# **Summary of Steller Sea Lion Protection SEIS Alternative 4 Measures: Development, Issues, and Rationale**

Prepared by  
Dave Witherell, Staff

# Background

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- ◆ Alternative 4 (The Area and Fishery Specific Approach) was originally proposed by RPA Committee in June 2001.
- ◆ The Committee's procedure in developing this alternative was to first review existing and new scientific data on Steller sea lions (telemetry, scat studies, survey counts) to determine sea lion needs and the types of actions needed to avoid jeopardy and adverse modification. The second step was to build a fishery management program around the sea lion needs. Fishery observer information and survey data were used to help design a management program that met MSA mandates and national standard guidelines.



# Sea Lion Needs

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- ◆ Satellite telemetry data indicated that Steller sea lions were located close to shore (most within 3 nm, > 85% within 10 nm), especially in the vicinity of rookeries and haulouts.
  - Committee response: minimize potential interaction of fisheries near rookeries and haulouts. For example, trawling is prohibited for pollock, cod, and mackerel within 10 nm of all rookeries and most haulouts.
- ◆ Survey Count data indicated that some rookeries were declining at rates > 10% per year
  - Committee response: provide additional protection to these areas (e.g., bigger closures around Agligadak and Buldir).

## Sea Lion Needs (continued)

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- ◆ Scientific consensus is that prey needs to be readily available to sea lions.
  - Committee response: spatially and temporally distribute the fishery to the extent practicable. Incorporate a global control rule to further reduce fishing pressure at low stock sizes.
- ◆ An experimental design should be incorporated to allow for monitoring of the efficacy of the measures implemented.
  - Committee response: close all of area 4 (Chignik), area 9 (Bogoslof), and the Seguam foraging area to fishing for pollock, mackerel, and cod. The 5 northern Bering Sea haulout closures would also be closed to these fisheries.

# Fishery Measures

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- ◆ Once sea lion needs were assessed, a management program was developed within the MSFCMA national standards, with particular attention paid to minimizing social (standard 8) and economic impacts (standards 1 and 5), minimizing bycatch (standard 9), and promoting safety at sea (standard 10). In addition, the conservation and management measures were developed based on the best available scientific information (standard 2).
- ◆ The following slides review the major measures proposed by Alternative 4 for each fishery, along with rationale for these measures.

# Atka Mackerel Fishery

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- ◆ East of 178W: the fishery can catch the TAC outside of critical habitat (CH), so all of CH was closed for maximum protection.
- ◆ West of 178W: Rookeries closed 0-10 nm. Haulouts were closed only to 3 nm, because many of the limited number of fishing spots occur in the 3-10 nm rings.
- ◆ Spatial-temporal dispersion attained through 2 seasons (50%), with 70%/30% apportionment inside and outside CH. Catch further spread out over time through platooning of the fleet in areas 542 and 543; should reduce daily catch by ~50%.
- ◆ Platooning based on random vessel selection with no switching once assigned. Rationale is that non-random or switching would be allocative in that it would provide additional advantages to companies with multi-vessels or partner companies.

# AI Cod and Pollock Fishery

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- ◆ All CH closed to pollock to prevent all potential interaction.
- ◆ Temporal dispersion of cod attained through 2 seasons.
- ◆ Fixed gear cod fisheries would be allowed in most CH area west of 173. Rationale is that this fleet has a low catch and is widely dispersed in the AI area. These fleets would be prohibited in CH east of 173 to help reduce cod catch in the areas where trawling would be allowed.
- ◆ Trawl cod fisheries allowed in most CH east of 178. Rationale is that the catcher vessels need access to these areas close to ports of Dutch Harbor and Adak. Trawl cod fisheries prohibited 0-10 (20?) nm from rookeries and haulouts west of 178 to provide full SSL protection.

# Bering Sea Cod and Pollock Fishery

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- ◆ Temporal dispersion of pollock and cod attained through 2 seasons (3 seasons for trawl cod).
- ◆ Pollock catch within the SCA limited to 28% of the annual TAC before April 1 to reduce potential competition during the A season, when spawning fish tend to be more aggregated. The Leitzell line 0-10 nm closure in the A season would eliminate all potential for pollock competition in the nearshore areas important for SSL foraging.
- ◆ Cod trawl fisheries prohibited within 10 nm of rookeries and haulouts in this area (except haulouts around Pribilofs; rationale: no SSLs surveyed here since ~1960). Fixed gear prohibited 0-7 at Amak rookery and 0-3 nm of haulouts (0-10 for c/p longliners at Reef-Lava and Bishop Pt haulouts).

# Gulf of Alaska Cod Fishery

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- ◆ Temporal dispersion attained through 2 seasons.
- ◆ Cod trawl fishery would be prohibited 0-20 nm of rookeries and haulouts in areas 1, 4, 5 (with exceptions), 10, and 11 to provide for maximum protection. Cod trawl fishery would be prohibited within 10 nm of rookeries and haulouts in areas 2 (rookeries closed to 15 and 20 nm) 3 (with exceptions), and 6 (with exceptions). Exceptions provide some opportunities for local fleets.
- ◆ Cod fixed gear fisheries prohibited 0-3 nm of all rookeries. Closures 0-10 nm set for rookeries in area 2, and in areas 10&11, 0-20 nm for pot gear and 0-10 nm for longline gear.

# Gulf of Alaska Pollock Fishery

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- ◆ Temporal dispersion attained through 4 seasons with 25% of the TAC apportioned to each.
- ◆ Pollock trawl fishery closure areas are the same as for cod trawl fishery. The rationale for these closures is that it minimizes potential competition with sea lions in the important nearshore areas around rookeries and haulouts.



# Global Control Rule

% Fishing mortality rate

